

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
22 September 2005 (22.09.2005)

PCT

(10) International Publication Number  
**WO 2005/088089 A1**

(51) International Patent Classification<sup>7</sup>: **F01N 3/025**, 9/00

(21) International Application Number:  
PCT/JP2005/004737

(22) International Filing Date: 10 March 2005 (10.03.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
2004-068993 11 March 2004 (11.03.2004) JP

(71) Applicants (for all designated States except US): **TOYOTA JIDOSHA KABUSHIKI KAISHA** [JP/JP]; 1, Toyota-cho, Toyota-shi, Aichi, 4718571 (JP). **DENSO CORPORATION** [JP/JP]; 1-1, Showa-cho, Kariya-shi, Aichi, 4488661 (JP).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **MATSUOKA,**

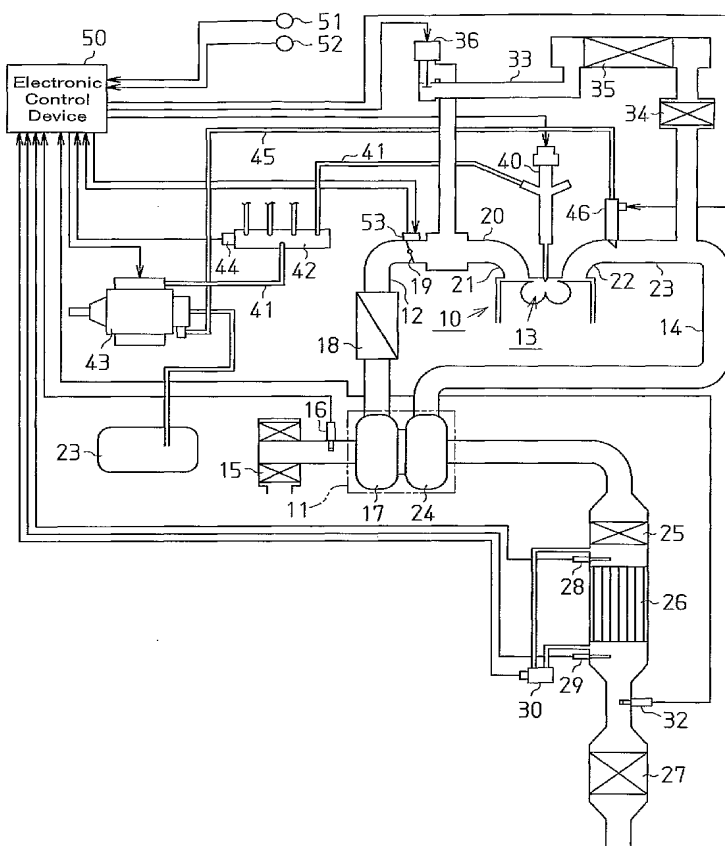
**Hiroki** [JP/JP]; c/o TOYOTA JIDOSHA KABUSHIKI KAISHA, 1, Toyota-cho, Toyota-shi, Aichi, 4718571 (JP). **YOKOI, Tatsuhisa** [JP/JP]; c/o TOYOTA JIDOSHA KABUSHIKI KAISHA, 1, Toyota-cho, Toyota-shi, Aichi, 4718571 (JP). **OTSUBO, Yasuhiko** [JP/JP]; c/o TOYOTA JIDOSHA KABUSHIKI KAISHA, 1, Toyota-cho, Toyota-shi, Aichi, 4718571 (JP). **MATSUNO, Shigehiro** [JP/JP]; c/o TOYOTA JIDOSHA KABUSHIKI KAISHA, 1, Toyota-cho, Toyota-shi, Aichi, 4718571 (JP). **INABA, Takayoshi** [JP/JP]; c/o DENSO CORPORATION, 1-1, Showa-cho, Kariya-shi, Aichi, 4488661 (JP).

(74) Agents: **ONDA, Hironori** et al.; 12-1, Ohmiya-cho 2-chome, Gifu-shi, Gifu, 5008731 (JP).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG,

[Continued on next page]

(54) Title: EXHAUST PURIFYING APPARATUS FOR INTERNAL COMBUSTION ENGINE



(57) Abstract: An exhaust purifying apparatus for an internal combustion engine includes an exhaust purifying mechanism, a fuel adding device, an electronic control device. The exhaust purifying mechanism is located in an exhaust passage and traps particulate matter. The fuel adding device adds fuel to exhaust gas that passes through the mechanism. The electronic control device detects a pressure difference between a section upstream and a section downstream of the exhaust purifying mechanism. While the fuel adding device is adding fuel to exhaust gas, the electronic control device compares the pressure difference that is detected at a predetermined point in time with the pressure difference reference value. When the pressure difference exceeds the pressure difference reference value, the electronic control device sets the manner of adding fuel to intermittent fuel addition. As a result, the exhaust purifying apparatus decreases the amount of particulate matter that remains in the exhaust purifying mechanism.



KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**(84) Designated States** (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,

**Published:**

— with international search report

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*